

WHAT IS CLAIMED IS:

1. A movement output apparatus for controllably moving a movement output means in at least two spatial dimensions, the apparatus including:

a cog means with a first diameter;

5 a ring with a track formed on an inner surface of the ring, the track having a second diameter which is larger than the first diameter;

wherein:

the cog means is rotatable by first driving means;

10 the ring is rotatable by second driving means;

the cog means is arranged to move, in use, along the track; and

the movement output means is attached to the cog means,

whereby, in use, movement of the cog means effects movement of the movement output means, and the movement of the movement output means

15 is controllable by control of the first and second driving means to produce substantially linear movement of the movement output means.

2. A movement output apparatus according to claim 1 wherein:

the ring defines a rotation plane and the cog means is rotatable by the first driving means about a first axis which is substantially perpendicular to the rotation plane;

5 the ring is rotatable by the second driving means about a second axis which is substantially perpendicular to the rotation plane,

10 the cog means is rotatable relative to the track about a third axis which is substantially perpendicular to the rotation plane, due to an interaction between the cog means and the track; and

the third axis is substantially parallel to, but substantially not co-linear with, the second axis.

3. A movement output apparatus according to claim 2 wherein the cog means and the track each have teeth which are meshable together.

4. A movement output apparatus according to claim 1 wherein the cog means and the track each have teeth which are meshable together.

5. A movement output apparatus according to claim 1 wherein at least one of the cog means and the track has a substantially circular configuration.
6. A movement output apparatus according to claim 1 wherein the cog means is rotatably mounted on a first shaft.
7. A movement output apparatus according to claim 6 wherein the first shaft is eccentrically mounted with respect to an output rotation axis of the first drive means.
8. A movement output apparatus according to claim 1 wherein the first diameter is approximately one half of the second diameter.
9. A movement output apparatus according to claim 1 wherein the output movement means is connected to a movement transmission means.
10. A movement output apparatus according to claim 1 further including control means for control of the second driving means, the control means operating according to a predetermined set of instructions.
11. A movement output apparatus according to claim 10 wherein the control means includes a suitably programmed computer.
12. A movement output apparatus according to claim 10, wherein, in use, the control means controls the first driving means.
13. A movement output apparatus according to claim 10 further including a controllable counterbalancing assembly, the assembly including an arrangement of masses which are moveable via one or more driving means controlled by the control means, wherein movement of  
5 the masses is capable of effecting a reduction of vibration in the apparatus.
14. A movement output apparatus according to claim 1 wherein the cog means and/or ring are replaceable by a cog means and/or ring of different dimensions in order for the movement output means to controllably describe a shape of different dimensions.

15. A movement output apparatus according to claim 1 wherein the movement of the movement output means is controllable to produce linear movement along either or both of two mutually perpendicular axes.
16. A movement output apparatus according to Claim 15 wherein in use the two axes are respectively substantially horizontal and substantially vertical.
17. A movement output apparatus according to claim 1 wherein the movement output means is attached to the cog means such that the centre of the movement output means is a distance from the axis of rotation of the cog means which is substantially equal to the first  
5 diameter.
18. A movement output apparatus according to claim 1 wherein the movement output means is substantially cylindrical and its central axis is substantially parallel to the axis of rotation of the cog means and its central axis is a distance from the axis of rotation of  
5 the cog means which is substantially equal to the first diameter.
19. A repetitive processing apparatus including a movement output apparatus according to claim 1, and further including a repetitive processing device for repeated performance of a particular process, wherein the repetitive processing device is connected to the movement  
5 output means, and in use the position of the repetitive processing device is controllable by control of the position of the movement output means.
20. A repetitive processing apparatus according to claim 19 further including moveable conveyor means, whereby articles on which a particular process is to be performed are moveable with respect to the apparatus.
21. A deposition apparatus including any apparatus according to claim 1.
22. A foodstuff processing apparatus including apparatus according to claim 19 wherein the repetitive processing device is a foodstuff

deposition manifold, the manifold being, in use, controllable to deposit foodstuff in a pre-programmed shape.

23. A foodstuff processing apparatus according to claim 22 wherein the foodstuff deposition manifold is capable of performing at least 40 cycles per minute.